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# FOREST CONTROL

## by CONTINUOUS INVENTORY

"Today I have grown taller from walking  
with the trees."

...Karle Wilson

Milwaukee 3, Wis. March, 1962 No. 96

### WATCH YOUR WOODS

There is no doubt about it, the forest is an interrelated, competitive society of plants and animals. Humans are not the only ones confronted with congregate living, and its problems.

If we want to set out to conciliate or cure all of the natural conflicts and contaminations of the heterogeneous forest habitat, and weld it into one harmonious, productive whole, we need the speed and concentration of CFI with data processing. With these, a constant touch and follow-through in the affairs of the forest can be maintained. Sound inventory control knowledge, quickly acquired and thoroughly digested, is the stuff of which fine forests are built.

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CAL STOTT  
Region 9



## KOOCHICHING COUNTY, MINNESOTA SIFTS CFI FACTS

Koochiching County is in northern Minnesota. It is a cold county at this time of the year, and it never warms up for a very long stretch in the summer either. The growing season for all plant life is very short in Koochiching County.

Farmers who tried to wrest a living from Koochiching County soils 40 to 50 years ago failed in their purpose. They soon learned that frosts were prohibitive to crops, and they soon gave up their lands. Great areas of privately-owned land gradually reverted to county ownership and then the trees promptly grew back. Only trees seem to do well on these broad northland acres.

Today 41 million trees of pulpwood size are growing on this county-owned land area of 300,000 acres. These trees, and these acres are managed by foresters employed by the county, and these foresters are doing a fine job.

Last year they measured the pulpwood growth of their trees.

Having previously set out 510 permanent sampling plots over the entire forest, the growth job presented no difficulties for them. The results are impressive with a net growth, plus harvest cut, of almost 1/2 cord per acre per year.

### GROWTH AND LOSS PER ACRE PER YEAR FOR A 4-YEAR PERIOD

Repeater growth	.338 cords
Ingrowth	<u>.232</u> cords
Total growth	.570 cords

Natural mortality	.099 cords
Harvest cut	<u>.101</u> cords
Total loss & use	.200 cords

Net growth	<u>.370</u> cords
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### GROWTH AND LOSS IN 4 YEARS ON 300,000 ACRES

Repeater growth	405,600 cords
Ingrowth	<u>278,400</u> cords
Total growth	684,000 cords

Natural mortality	118,800 cords
Harvest cut	<u>121,200</u> cords
Total loss & use	240,000 cords

Net growth	<u>444,000</u> cords
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Answers for an average acre are answers in a nutshell. Results are even more impressive when they are expanded to the total forest area.

You will recall that this was the land nobody wanted 40 to 50 years ago. Well, these 300,000 acres of cold Koochiching County land

managed to grow a net of 444,000 cords of pulpwood in four years' time. During this same period another 121,200 cords were cut and sold by the County.

CAL STOTT  
Forester

## A PRODIGIOUS AND MASTERFUL ACCOMPLISHMENT

I want to tell you in this Newsletter about a young forester who may be as real as you like, or as imaginary as you care to make him, but to me he is very real. He actually did the wonderful things of which I write, and he accomplished much more than less imaginative folks are inclined to believe, or ever to accomplish.

Working with a tally man for 27 consecutive months, this young man established 1136 permanent, fixed radius plots of one-fifth acre size on 250,000 acres of industrial forest land. True, there were others involved in the preliminaries of this work, but only one man measured all of the trees in all of the plots. Using extreme care, he recorded in the woods, on individual punch cards, the descriptions and dimensions of 15,000 trees, 7" and larger in diameter. The single plot stations, scattered with fine impartiality at fixed intervals over the landscape, demanded more than 60,000 miles of travel by car, jeep and boat. This cruiser and his tally man walked over 2,000 miles within the plots and between plot stations, which were previously located by 500 miles of general land surveying.

Highland and swamp, plantation and burn, young growth and old, forest and field; every imaginable ecological habitat from poor pine barrens to lush rich lowlands, was encountered. Fighting thorn, time and weather, battling snakes, bugs and brush, pushing through dense young growth and over difficult terrain, this forester-cruiser completed his record-breaking inventory at the rate of 3.2 plots per working day.

### WHAT DID THIS FORESTER REALLY ACCOMPLISH FOR HIS COMPANY?

#### Geographical Knowledge

Now consider with me, what this young man accomplished over and above the mere drudgery of setting out so many permanent inventory plots. First of all, his peregrinations covered the company's industrial holdings within a relatively short period of time, and in a completely systematic and unbiased way. He was the only company employee ever to travel, in 2 years and 3 months, over all of the company land. Since this coverage was made in consecutive days, a knowledge of the physical features gained one day merged with the knowledge of the next to provide a distinct and continuous picture of the entire forest property. This Marco Polo of the woodlands acquired in short order, a bird's-eye view of geography and accessibility, of soil, site and terrain, of rivers, lakes and drainage, and of every other more or less unchanging physical feature of the landscape. Such awareness is seldom acquired for any quarter-million acre forest in less than a lifetime of professional work, but this forester acquired it in 27 months.

This concentrated geographic and physiographic knowledge, stored in the memory units of a young company forester's mind, is worth a small fortune to any industrial forest landowner.

#### Ecological Knowledge

Consider also the vast store of knowledge of the science of forest ecology (the foundation for all good forestry) which this man amassed during his brief period of CFI plot work. How many tree by tree comparisons and contrasts he made! So many that he has come to know the trees in terms of their years of growth. He understands the physiological condition of trees. He sees and respects the natural environmental arrangement of forest trees and stands. He has in short,

learned to anticipate many of the changing ways of the fickle forest, and I am sure that the silvical status and the silvicultural needs of most company-owned forest stands are now apparent at a glance to this intrepid cruiser.

Bits of silvical history tramp closely on the heels of each other in the natural forest, and this is the way they should be read. The finer correlations are often overlooked or wholly forgotten between widely separated periods of examination. This has not happened on this CFI project. A fine background continuity of forestry facts has been almost subconsciously built into the thinking cells and coffers of the young man who so scientifically examined these quarter-million acres of woods in such short time.

This ready and lively background of ecological and silvical knowledge, so necessary to wise decisions on the silvicultural management of forests everywhere, is worth a small fortune to any industrial forest landowner.

#### Machine Knowledge - Processing Inventory Returns

One more feature of this gigantic inventory task is every bit as dramatic as the others, even though it is not concerned with the wild woods, but only with the automatic data processing center. With the close of field work the cruiser immediately began compiling the figures. The results of his purposeful wanderings and earnest data collection were transferred to clear-cut, classified facts on paper only a few weeks after the woods work ended. CFI endeavors to do this in every case. Here are facts and knowledge ordinarily secured piecemeal at great time intervals, but now condensed into one short data processing job.

CFI is truly a forest trial balance. It clips, cuts, and compresses within one small frame, all of the many facets of the broad forest picture. Here is the opportunity for the forester and executive management to get together and look things over on the basis of the whole wide forest. This is the time to correct prior misconceptions, to measure the relative importance of ecological conditions, and to cogitate on values in relation to volumes and costs. But most important of all, this is the occasion to visualize realistically on a foundation of tested fact, what the entire forest must some day come to be.

Knowledge of the woods quickly assimilated by the forester, data processing personally collected information, far outweighs in importance all other forms of second-hand woods knowledge. Here for the first time this whole worthwhile procedure, from the woods through the machines, has been accomplished by the work of one technically trained man.

This young forester, in a few weeks of automatic data processing, has incorporated into his thinking, important forest, stand and tree correlations which a lifetime of more interrupted observation and indirect study often fails to provide.

The time saving in understanding, which comes with the all-inclusive processing of CFI data, is worth a small fortune to any industrial forest landowner.

CAL STOTT  
Forester